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| 10/514,424 | 05/26/2005 | Rudolf Peter Muis | OCT-0013-US | 8641 |

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PAUL, HASTINGS, JANOFSKY & WALKER LLP
875 15th Street, NW
Washington, DC 20005

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| EXAMINER |
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ROLLAND, ALEX A

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| ART UNIT | PAPER NUMBER |
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1792

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12/11/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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|------------------------------|--------------------------------------|------------------------------------|--|
| Office Action Summary | Application No. 10/514,424 | Applicant(s) MUIS ET AL. | |
| | Examiner ALEX ROLLAND | Art Unit 1792 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 September 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-20 is/are pending in the application.
- 4a) Of the above claim(s) 1 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 2-7, 10, 12, 16 rejected under 35 U.S.C. 102(b) as being anticipated by Kiguchi et al (EP 0930641 A2).

Kiguchi et al teaches an apparatus comprising:

a tubular dispensing means in the form of an ink-jet print head equipped with a nozzle plate having a plurality of tubular nozzles (col. 7, lines 42-53);

an ink tank functioning as a liquid container (col. 7, line 33); and

a pipe connecting said ink tank to said ink-jet print head functioning as a conduit means (See Fig. 1, item 27 and col. 7, line 34).

Claims 3-5: a drive mechanism which allows the ink-jet print head to be moved in the direction of the X- axis and Y-axis (col. 8, lines 38-50); additionally, it is possible to use an arrangement in which the substrate is moved in relation to the ink-jet print head (col. 8, line 51-col. 9, line 2); it is well established in the art that movement of the substrate in this fashion constitutes an XY table.

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Claim 6: a treatment apparatus is provided which may include a compressor and heater for blowing hot air, a laser emitting diode for generating laser light, or a lamp for lamp irradiation all of which are used to heat the substrate during the coating process (col. 10, lines 19-58).

Claim 7: the ink-jet print head 2 is connected at a first outer end to a first liquid supply pipe 27 (See Fig. 1) and said ink-jet print head is closed at a second outer end, the side wall of the ink-jet print head(See Fig. 1 and Fig. 18).

Claims 10, 16: nozzle 211 has circular outer periphery in vertical cross-section (See Fig. 18 & 19).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
6. Claims 8, 9, 11, 13-15, and 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kiguchi et al (EP 0930641 A2), as applied to claims 2-7, 10, 12, 14, 16 above, in further view of Crockett et al (US 6,655,791).

Kiguchi et al is discussed above but does not teach two liquid supply lines connected to the tubular dispensing means or conduit means comprising a liquid metering pump .

However, Crockett et al teaches a printhead 15 connected to a first liquid supply line (unlabeled, line that connects management block 16 to printhead 15) and a second liquid recirculation line 10 (See Fig.1). Also, Crockett et al teaches an ink management block comprising a pump assembly and flow rate control. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have combined the printing technique of Kiguchi et al and the printhead arrangement of Crockett et al for the predictable result of increased control of dispensing. One would have been

motivated to make such modification because it increases industrial applicability not only by improving quality but also reducing manufacturing cost.

Although Kiguchi et al is discussed above but does not teach lateral outlet openings provided in the top side of the tubular dispensing means which is recited in claim 9, however, Kiguchi et al teaches lateral outlet openings 211 in the bottom side of the tubular dispensing means 2 (See Fig. 20) and bottom dispensing is but one of the finite number of predictable solutions including top dispensing and side dispensing. Therefore, it would have been obvious to one of ordinary skill in the art to try top dispensing in an attempt to improve the dispensing process, as a person with ordinary skill has a good reason to pursue the known options within his or her technical grasp.

Response to Arguments

1. Applicant's arguments filed 9/9/08 have been fully considered but they are not persuasive. Applicants argue, in part, that the ink-jet printing head taught by Kiguchi is not a tubular dispensing means. However, the Examiner disagrees. Evidence of the ink-jet printing head conforming to the definition of a tubular dispensing means is provided by Kiguchi, Fig. 18 which shows the ink-jet print head face plate having circular dispensing holes with some depth. The examiner also disagrees that the ink-jet print head has only one opening as evidenced by Fig. 18 which shows multiple openings.
2. In response to applicant's argument that Kiguchi and Crockett are nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the

claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, it is the position of the examiner that an ink jet printing method is reasonably pertinent to the process of depositing a layer of second material to a layer of nanocrystalline first material, ink jet printing being a well known method for deposition in general.

3. The examiner also disagrees that it is impossible to rearrange Kiguchi to direct the lateral openings to the top side of the ink jet printing head. In fact, the Examiner takes the position that such a change would result in an apparatus identical to the claimed apparatus.

Conclusion

7. No Claims are allowed. All pending claims are rejected for the reasons set forth above.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALEX ROLLAND whose telephone number is (571)270-5355. The examiner can normally be reached on Monday through Friday, 9:00 a.m. to 5:00 p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Cleveland can be reached on (571)272-1418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ALEX ROLLAND/
Examiner, Art Unit 1792

/Michael Cleveland/
Supervisory Patent Examiner, Art Unit 1792